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REMARKS

The Action mailed November 21, 2007, rejected all pending claims 1-20. Applicants have amended claims 1, 5, 6, 9, 11, 12, 14, 17 and 18 above. As such, claims 1-20 remain pending. Applicants request reconsideration in view of the amendments above and the following remarks.

Double Patenting Rejections

Claim 5 was provisionally rejected on the ground of non-statutory obviousness-type double patenting, as being unpatentable over claim 1 of co-pending Application No. 10/454,370 ("the '370 application," see U.S. Patent Publication No. 2004/0250255), in view of Tomayo et al. (U.S. Patent 6,941,318).

The '370 application was at the time of the inventions and remain today assigned to the same assignee as the present application, SAP Aktiengesselschaft. In addition, the '370 application is still in prosecution. If at some point a terminal disclaimer is needed to advance prosecution, Applicants will consider the need for doing so if and when that time occurs.

Claim Rejections – 35 USC 101

Claims 1-4 stand rejected under 35 U.S.C. 101 on the ground that the claimed invention is allegedly directed to non-statutory subject matter. Of these claims, claim 1 is the only independent claim.

The Office Action stated, in particular, that claims 1-4 recite the computer system, "but do not provide any hardware that performs those steps." The Office Action stated that "[i]t appears reasonable to interpret this computer system by one of the ordinary skill in the art as software, per se, and therefore, is non-statutory."

Applicants respectfully disagree. First, claim 1 is directed to a computer system that includes a "model version selection module" and a "mapping module" to perform the steps recited in the claims. As such, the hardware that performs the steps recited in the claims are these two modules, and therefore, the claim is not directed to software per se. Finally, modular

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computer systems that may be implemented using computer software, such as the subject matter of claims 1-4, are certainly patentable subject matter.

Accordingly, Applicants respectfully request that the Section 101 rejection of claims 1-4 be withdrawn.

Claim Rejections – 35 USC 112

Claims 6, 9 and 18 stand rejected under 35 U.S.C. 112, second paragraph, for allegedly being indefinite. The Office Action found the language "substantially matches" to be unclear. In order to advance prosecution on the merits, claims 6, 9 and 18 are amended above to provide further clarity. As such, Applicants respectfully request that the indefiniteness rejections of these claims be withdrawn.

In addition, claims 11 and 12 stand rejected under 35 U.S.C. 112, second paragraph, for allegedly being indefinite. The Office Action found the language "substantially identical" to be unclear. In order to advance prosecution on the merits, claims 11 and 12 are amended above to provide further clarity. As such, Applicants respectfully request that the indefiniteness rejections of these claims be withdrawn.

Claim Rejections – 35 USC 103

Claims 1-13 and 17-20

Claims 1-13 and 17-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Russakovsky et al. (U.S. Patent 7,024,417) in view of Tomayo et al. (U.S. Patent 6,941,318). Of these, claims 1, 5 and 17 are independent claims. Applicants have amended each of the pending independent claims 1, 5 and 17 to define more particularly the subject matter sought to be protected. The amendments add no new matter. For the reasons discussed below, Applicants submit that claims 1, 5 and 17, as amended, each define subject matter that is patentable over Russakovsky and Tomayo. The fact that Applicants distinguish their claims from Russakovsky and Tomayo should not be taken as an admission that Russakovsky is properly considered prior art under any sub-section of 35 U.S.C. 102.

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Russakovsky relates specifically, and exclusively, to the field of data mining, and specifically, discloses a universal framework for data mining. (See col. 1, lines 7-9.) Russakovsky states that the disclosed universal framework enables data mining algorithms to be plugged into it without any change to algorithm software algorithms by which dependencies or patterns in large amounts of data are found, while still providing all the standard data mining tasks. (Col. 1, lines 54-57 and 13-16.) Russakovsky also discloses that the framework itself is a generic tool for performing data mining.

Tomayo relates to generating a representation in the form of a tree of a data mining model that improves the transparency of data mining models so as to be more easily interpretable by human users. (Abstract; col. 2, lines 45-47.) Tomayo discloses a process shown in FIG. 3 that is used to generate an "interpreted tree," such as that shown in FIG. 5. (Col. 4, lines 14-15; col. 6, lines 11-13.) In step 304 of the FIG. 3 process, a "callable version" of a data mining model is generated. (Col. 4, lines 18-19.) Tomayo discloses that the callable version of the data mining model may be generated using any type of inductive and/or statistical data mining model, such as machine learning models, etc. (Col. 4, lines 21-25.) Tomayo discloses that next in the FIG. 3 process, in step 306, a tree representing the data mining model is generated or updated. (Col. 4, lines 32-33 and 52-53.) Tomayo discloses that this may be done by creating a split and new nodes using the output of the callable version of the data mining model on the original input dataset and on data that is created thereafter. (Col. 4, lines 33-36.)

Independent claim 1: Russakovsky and Tomayo, even if combined, do not disclose or suggest the subject matter set forth in Applicants' claim 1, as amended. First, neither Russakovsky nor Tomayo discloses or suggests, as is recited in claim 1, a computer system that comprises "a model version selection module that is operable to use a predefined task name in a task request received from a front-end software application to determine, from predefined task definition information, a specific version of a data mining model to be used during execution of an analytical task." More particularly, neither reference discloses or suggests the use of "predefined task definition information" from which the specific version of a data mining model is determined, as is required by claim 1.

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The Office Action cites to column 4, lines 52-53 for the proposition that a callable version of the data mining model can be generated or updated, and that an update model is a new version of data mining model. This position is flawed for several reasons. First, at column 4, lines 52-53, the "update" being discussed is of a tree representing a data model, not the callable data model itself. Moreover, generating multiple versions of a data mining model by itself does not meet the limitations of Applicants' claim 1. Applicants' claim 1, as amended, requires that there be a determination, from predefined task information, of a specific version of a data mining model to be used during execution of an analytical task. There is no disclosure or suggestion of this in either Russakovsky or Tomayo.

Second, neither Russakovsky nor Tomayo discloses or suggests, as is recited in claim 1, a computer system that comprises "a mapping module that is operable to map, in accordance with mapping definitions included in the predefined task definition information, input data including in the task request received from the front-end software application into a format usable by the specific version of the data mining model." More particularly, neither reference discloses or suggests the use of "predefined task definition information" in this manner, namely to provide a mapping of input data that is needed for the specific version of the data mining model being used in the task.

Claim 1 is also not obvious in view of the references upon which the Office is relying. For example, the computing system set forth in claim 1 provides for important advantages that are not possible with the systems described in Russakovsky and Tomayo. Applicants' system of claim 1, by having predefined task definitions that identify the version of a data model to use for a task and the data mappings, enable analytical tasks to be easily and adaptably integrated with front-end software applications. For example, there may be two different analytical tasks defined that use different versions of a data mining model, and different mappings to the specific data mining model version. (See Applicants' specification at page 1, line 22 to page 2, line 12; page 2, line 23 to page 3, line 4; and page 6, lines 7-22.) These tasks may be easily and flexibly defined, and then used in the run-time processing of requests from a front-end software application for analytical tasks to be executed.

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Accordingly, independent claim 1 defines subject matter that is patentable over Russakovsky and Tomayo, as do dependent claims 2-4.

Independent claim 5: Russakovsky and Tomayo, even if combined, also do not disclose or suggest the subject matter set forth in Applicants' claim 5, as amended, for reasons similar to those discussed above in connection with independent claim 1. In particular, neither Russakovsky nor Tomayo discloses a method comprising "using the predefined task name to identify, from predefined task definition information, a first/second version of the data mining model to be using when executing a first/second analytical task," and "using a first/second input mapping function to map, in accordance with mapping information included in the predefined task definition information, the first/second set of input values into a first/second set of mapped input values for use by the first/second version of the data mining model when executing the first/second analytical task."

Accordingly, independent claim 5 defines subject matter that is patentable over Russakovsky and Tomayo, as do dependent claims 6-13.

Independent claim 17: Russakovsky and Tomayo, even if combined, also do not disclose or suggest the subject matter set forth in Applicants' claim 17, as amended, for reasons similar to those discussed above in connection with independent claims 1 and 5. In particular, neither Russakovsky nor Tomayo discloses or suggests a method comprising "using the first/second version of the data mining model during execution of a first/second set of analytical tasks requested by a front-end software application, wherein the use of the first/second version of the data mining model is determined by predefined task definition information."

Accordingly, independent claim 17 defines subject matter that is patentable over Russakovsky and Tomayo, as do dependent claims 18-20.

Claims 14-16

Claims 14-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Russakovsky (discussed above), in view of Heytens et al. (U.S. Patent Publication No. 2003/0220860). Of these, only claim 14 is an independent claim. Applicants have amended

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claim 14 to define more particularly the subject matter sought to be protected. The amendment adds no new matter. For the reasons discussed below, Applicants submit that claim 14, as amended, defines subject matter that is patentable over Russakovsky and Heytens. The fact that Applicants distinguish their claims from Russakovsky and Heytens should not be taken as an admission that Russakovsky is properly considered prior art under any sub-section of 35 U.S.C. 102.

Russakovsky is described above. Heytens discloses analytical learning cycle techniques implemented in a zero latency enterprise. [Para. 0010.] Heytens discloses that the analytical learning cycle includes, among other things, preparing a modeling data set from explored data, and building a model from the modeling data set. [Para. 0012.] The model building stage of the cycle involves the use of data mining tools and algorithms in a data mining server. [Para. 0085.] Heytens discloses that typically more than one model is built. [Para. 0090.] Heytens further discloses that model information stored in an operational data store includes a unique model name and version number. [Para. 0090.]

Independent claim 14: Russakovsky and Heytens, even if combined, do not disclose or suggest the subject matter set forth in Applicants' claim 14, as amended. First off, neither Russakovsky nor Heytens discloses, as is recited in claim 14, a "computer method for configuring a prediction task definition," which involves "storing [various provided information] "as a prediction task definition that is capable of being accessed when a request is received that the prediction task be performed." Indeed, neither Russakovsky nor Heytens involves configuring a prediction task definition that is used later when a request to perform the prediction request is received.

In addition, neither Russakovsky nor Heytens discloses or suggests, as is recited in claim 14, a method for configuring a prediction task definition that includes both "providing a unique version identifier to identify a unique version of the data mining model to be used during execution of a prediction task," and also "providing input mapping definition information to map the input information into mapped input information capable of being used by the unique version of the data mining model during execution of the prediction task." As discussed in connection

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with other claims above, using the version information in a task definition in this manner provides for a flexible and easy approach to defining analytical tasks for later execution, which approach is not discussed or even alluded to in either Russakovsky or Heytens.

Accordingly, independent claim 14 defines subject matter that is patentable over Russakovsky and Heytens, as do dependent claims 15-16.

Conclusion

Applicants submit that claims 1-20 are in condition for allowance, and requests that the Examiner issue a notice of allowance.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.
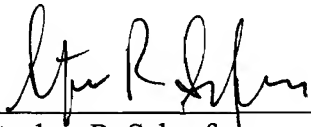
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Examiner is authorized to charge deposit account 06-1050 $1020 for the Petition for

Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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